

J. H. WILLIAMS.

MEANS FOR SECURING METALLIC BANDS TO BOXES.

No. 397,262.

Patented Feb. 5, 1889.

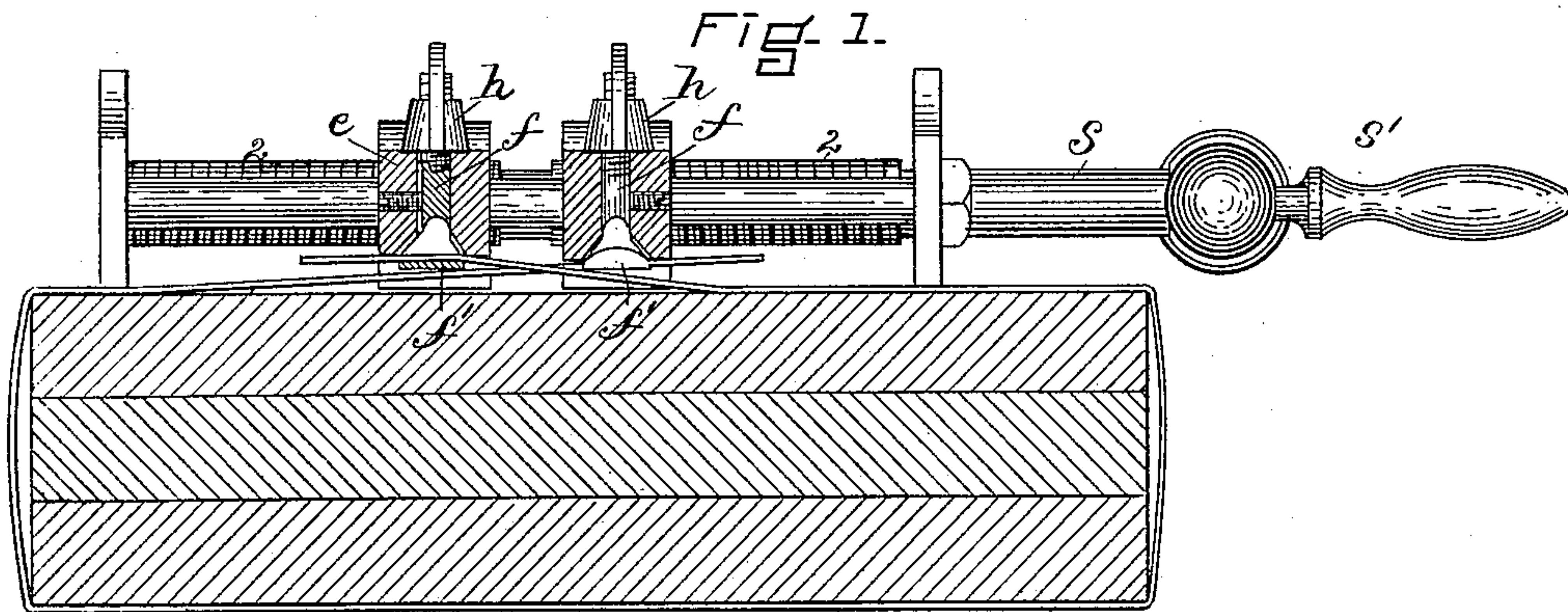
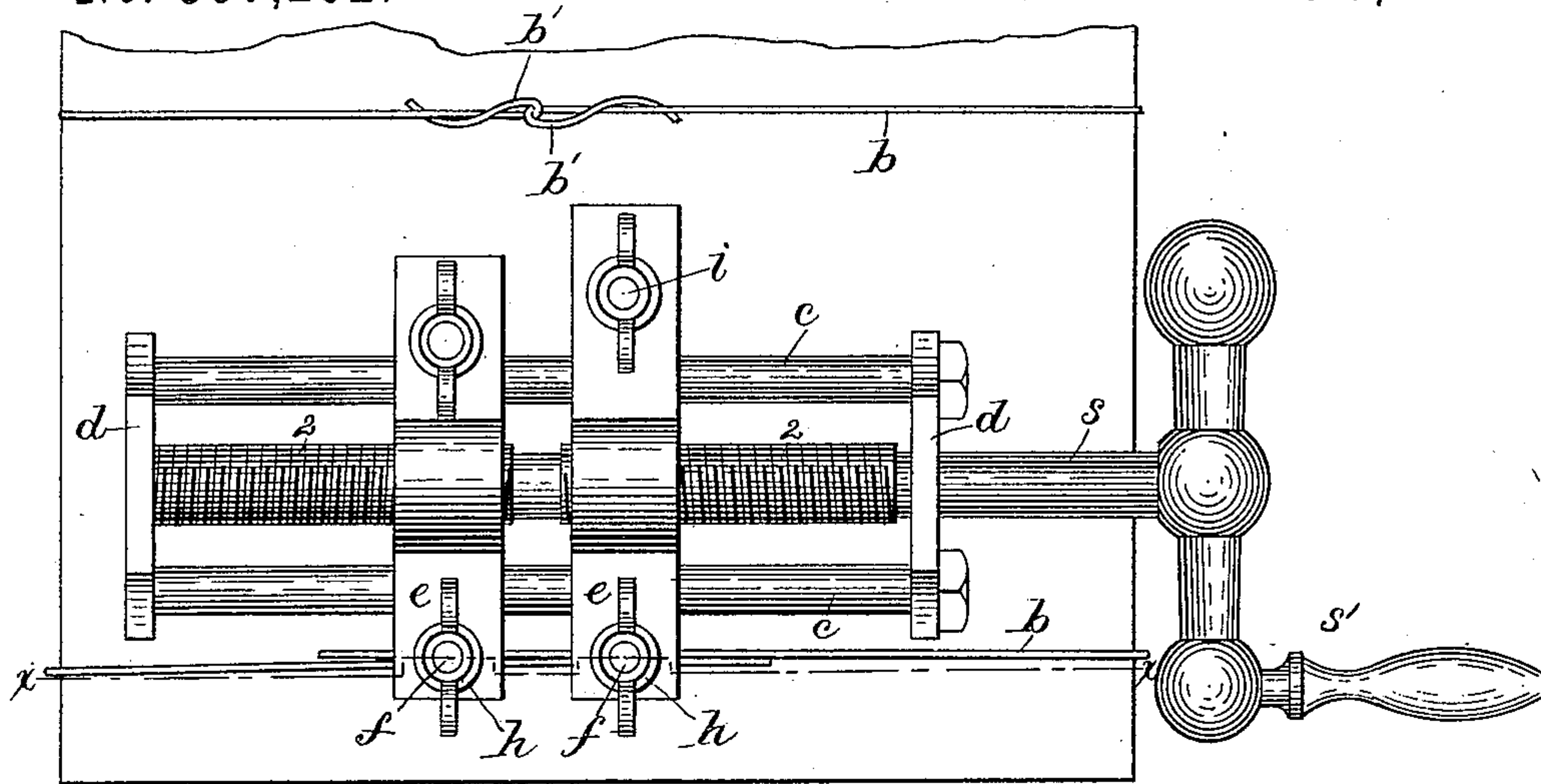


FIG. 2.

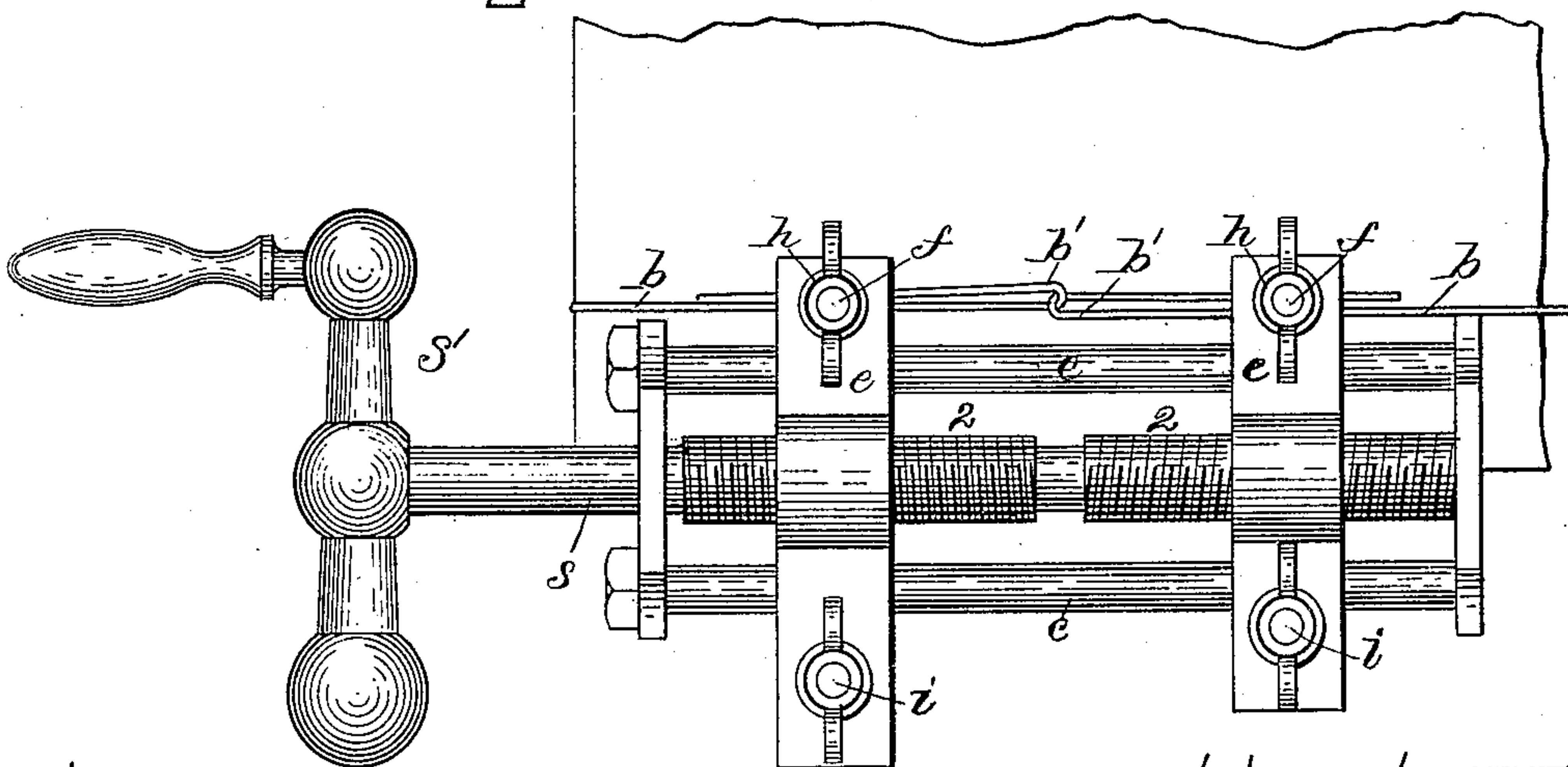


FIG. 3.

WITNESSES.

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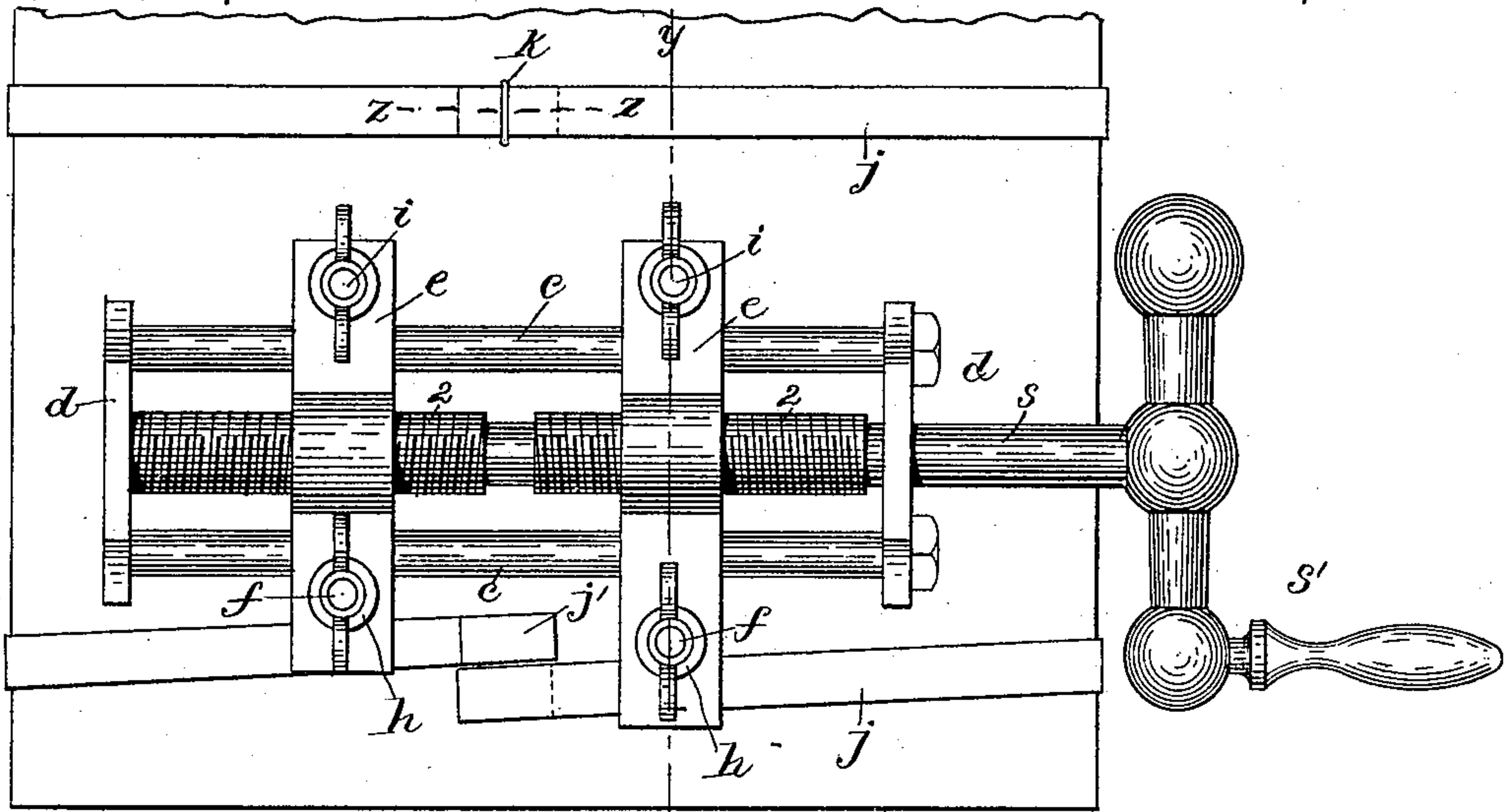


FIG. 4.

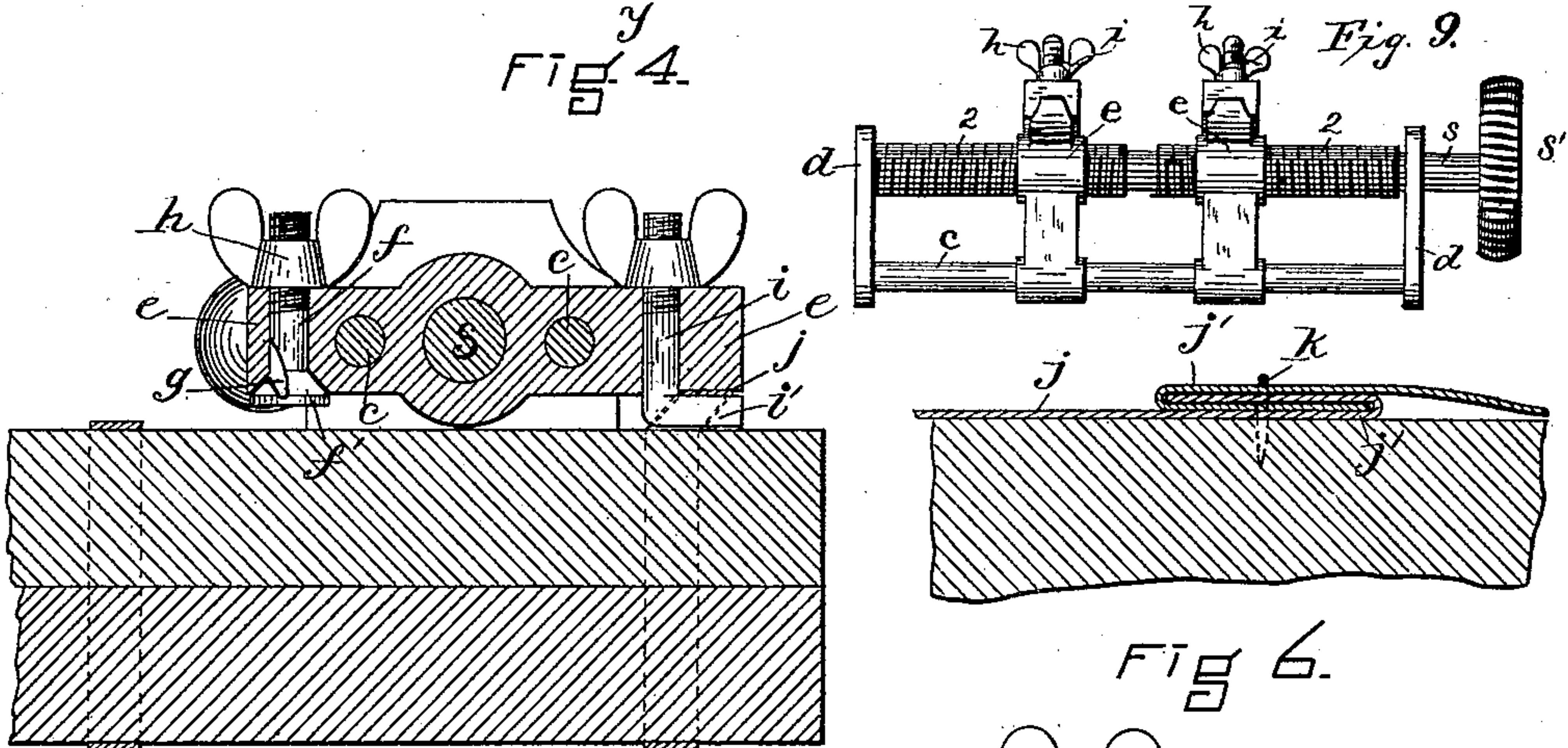


FIG. 5.

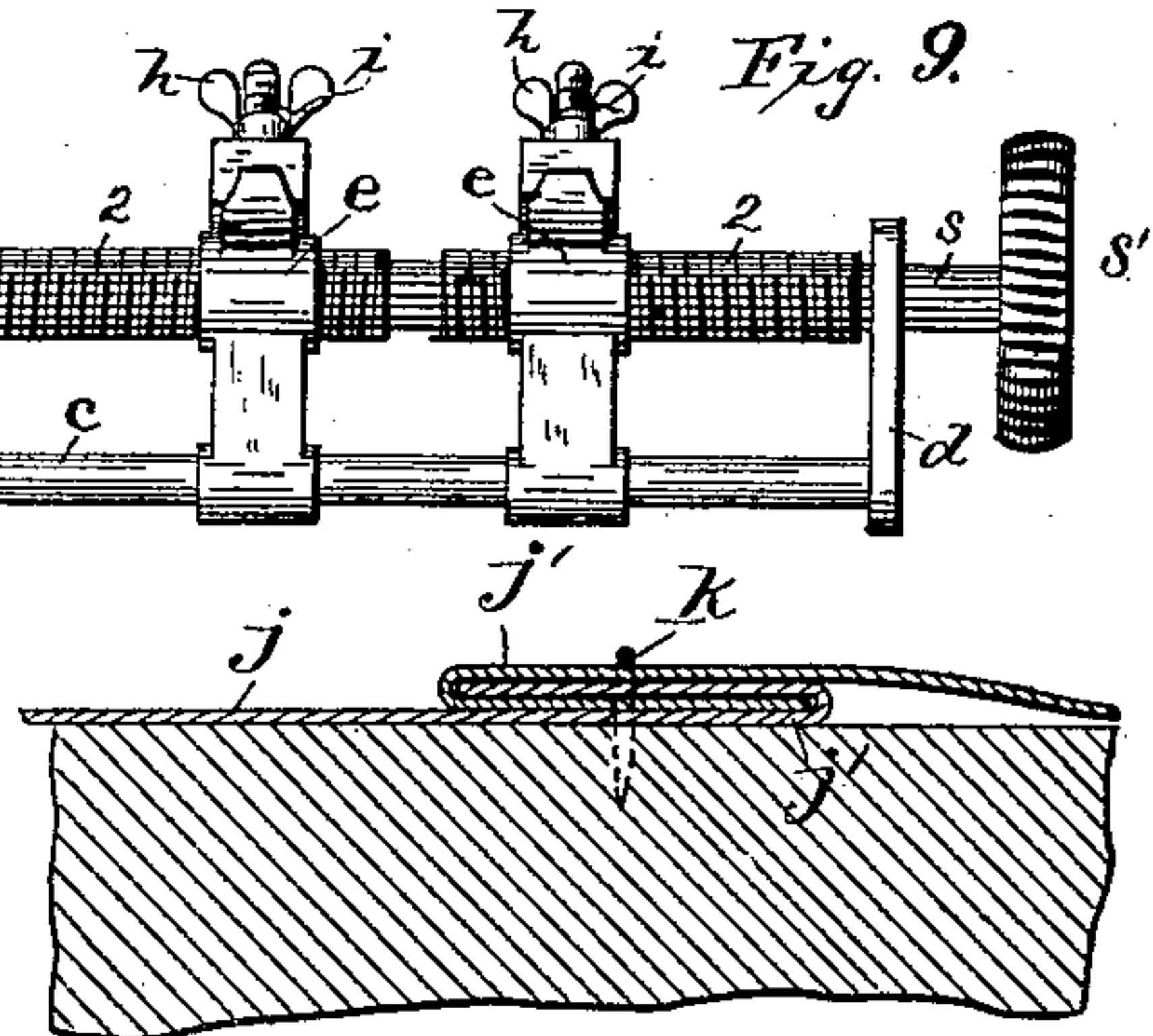


FIG. 6.

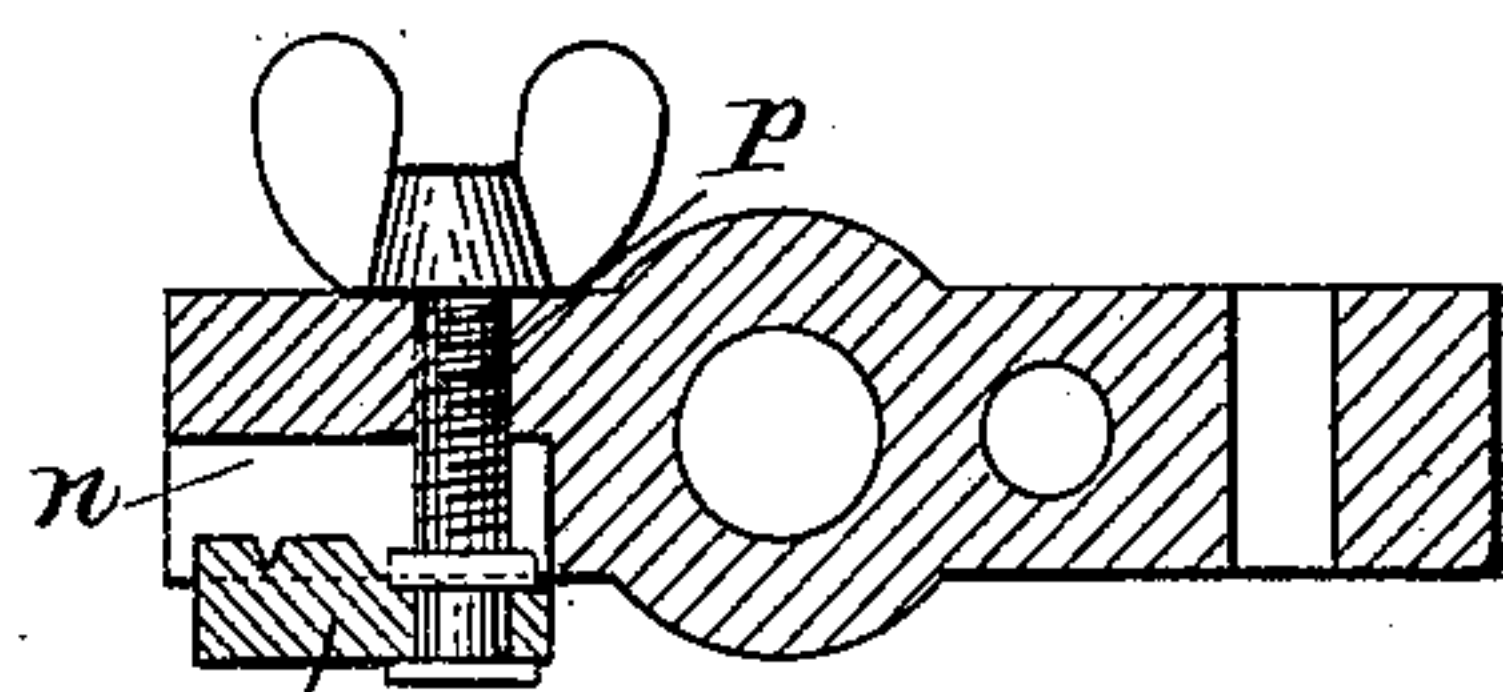


FIG. 7.

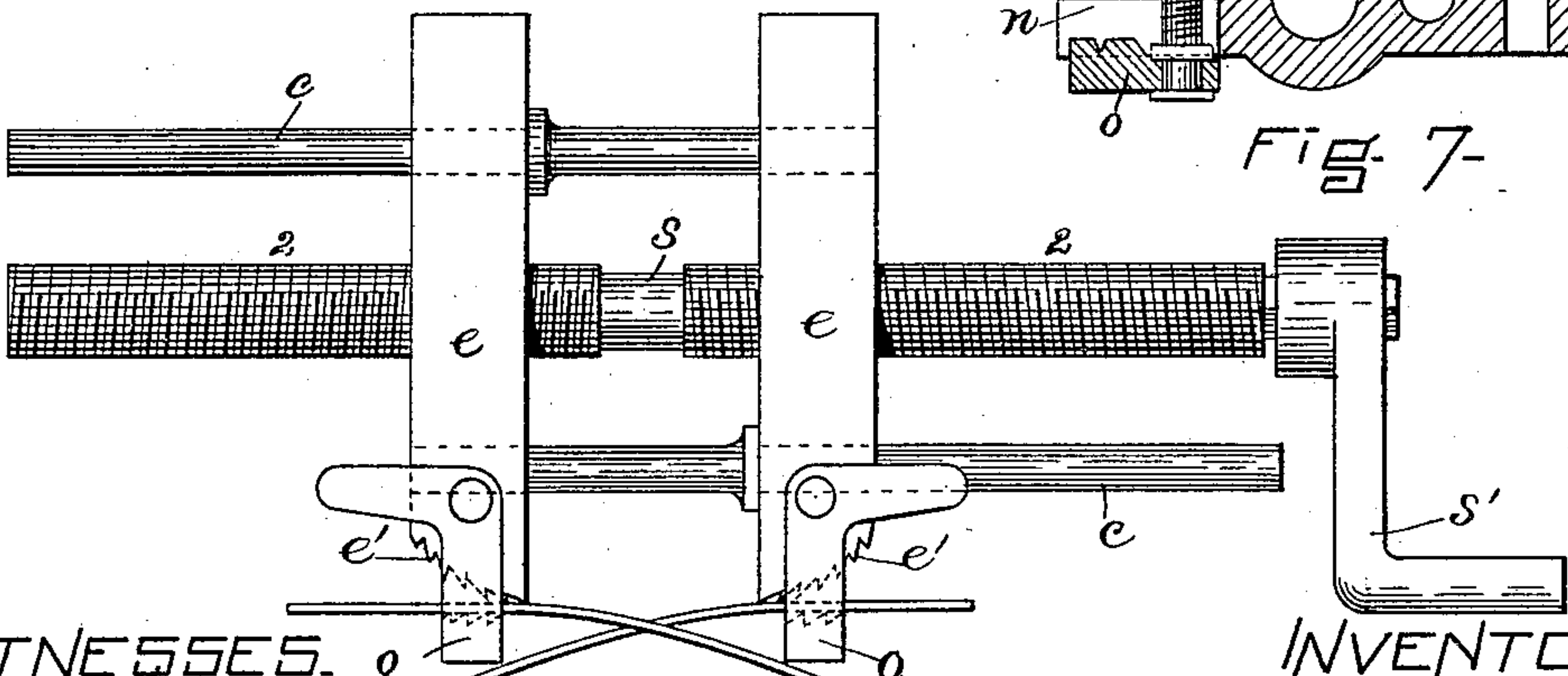


FIG. 8.

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UNITED STATES PATENT OFFICE.

JOHN H. WILLIAMS, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF
TO J. C. SLEEPER AND J. A. SLEEPER, OF SAME PLACE.

MEANS FOR SECURING METALLIC BANDS TO BOXES.

SPECIFICATION forming part of Letters Patent No. 397,262, dated February 5, 1889.

Application filed July 2, 1887. Serial No. 243,229. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. WILLIAMS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and
5 useful Improvements in Means for Securing Metallic Bands to Boxes, Bales, &c., of which the following is a specification.

This invention has for its object to produce an improved means for tightening wire around
10 and securing it to a bale, box, or other article; and it consists in a certain improved construction, which I will now proceed to describe, and will point out its points of novelty in the claims at the end of this specification.

15 Of the accompanying drawings, forming a part of this specification, Figure 1 represents a top view of my improved band-tightening apparatus placed upon a bale or package and engaged with the ends of a wire band preparatory to tightening and securing the latter.
20 Fig. 2 represents a section on line *x x*, Fig. 1. Fig. 3 represents a top view after the band has been tightened and its ends bent back by the reversal of the position of the apparatus.
25 Fig. 4 represents a top view showing the tightening apparatus as used to tighten a band of hoop-iron. Fig. 5 represents a section on line *y y*, Fig. 4. Fig. 6 represents a section on line *z z*, Fig. 4. Fig. 7 is a sectional view of a
30 modified form of clamping device, and Fig. 8 a side view of a modified form of clamping and tightening device. Fig. 9 is a view of a modification in which one guide-rod is employed.

35 The same letters of reference indicate the same parts in all of the figures.

In carrying out my invention I provide an apparatus having two clamps, *e e*, each adapted to firmly grasp a binding-wire, *b*, a screw-shaft,
40 *s*, having two oppositely-threaded portions, 2, one of which is engaged with the one clamp and the other with the other clamp, and in the construction shown in Figs. 1, 2, 3, and 4 a suitable supporting-frame comprising one
45 or more guide-rods, *c*, on which the clamps are adapted to slide, and end pieces, *d d*, in which the screw is journaled and to which the guide-rods *c* are attached. Two guide-rods, *c c*, are here shown extending parallel
50 with the screw *s* and affixed at their ends to the end pieces, *d d*; but it is obvious that one

of said guide-rods may be dispensed with, if desired. The screw has a suitable crank or operating device, *s'*, whereby it may be rotated. The rotation of the screw causes the clamps 55 to move simultaneously in opposite directions, as will be readily seen.

The construction of the clamps may be variously modified. As shown in Figs. 1, 2, 3, 4, and 5, each clamp is composed of a socketed 60 block, *e*, and a bolt, *f*, fitted in said socket and formed with a tapering head, *f'*, in one side of which is a V-shaped groove, *g*, Fig. 5, which receives the wire. The upper end of the bolt *f* is threaded and provided with a thumb-nut, 65 *h*, which bears on the upper surface of the block *e*. When a wire has been inserted in the groove *g*, the nut *h* is turned in the direction required to draw the tapering grooved head of the bolt into the socket of the block 70 *e*, the wire being thus firmly grasped.

Operation: The wire band *b*, being passed around the bale, box, or other article, with its ends overlapping, said ends are engaged with the clamps, as shown in Fig. 1. The screw is 75 then rotated to move the clamp apart, and thus tighten the band by pulling its overlapping ends in opposite directions. When the desired tension has been thus applied to the band, the operator turns the apparatus end 80 for end, as shown in Fig. 3, and by so doing bends back each of the overlapping ends of the wire upon itself, thus forming on each end of the wire a hook or loop, *b'*, which is interlocked with the hook or loop of the other 85 end, the said hooks or loops being of such form that they lie close to the surface of the bale or box and do not project therefrom, so as to be liable to be caught and displayed by external objects. The extremities of the hooks 90 or loops may be tucked under the main portions of the wire to keep them in place, as shown in the upper part of Fig. 1. It will be seen that the strain or tension is maintained on the wire by the clamps during the opera- 95 tion of bending back the ends of the wire, so that there is no loss of tension or slacking of the wire during the bending operation. The abrupt bending of the two wires into interlocking hooks enables said hooks to maintain 100 the tension after the clamps are removed from the wire.

I prefer to construct the apparatus so that it can be used to tighten a band of hoop-iron, and to this end I provide one end of each block *e* with a bolt, *i*, having an offset, *i'*, at its lower end formed to clamp a flat band, *j*, between itself and the inner surface of the block *e*, as shown in Fig. 5. As the apparatus is not to be reversed after tightening the band *j*, the clamps are set at a considerable distance apart before the operation, and are moved toward each other to tighten the band. The lapping ends of the band *j* are formed with hooks, *j' j'*, adapted to interlock, as shown in Fig. 6. One of the blocks *e* is made longer than the other block, so that the ends of the band can stand side by side, as shown in Fig. 4 while the band is being tightened, the hooks *j' j'* being afterward moved laterally to interlock them. The interlocked ends of the band may be secured by a staple, *k*, or other suitable fastening driven into the box or bale, as shown in Fig. 6.

In Fig. 7 I have shown the block *e* provided with a recess, *n*, and a grooved clamping-jaw, *o*, which is engaged with a screw-bolt, *p*, whereby it may be moved into and out of said recess to grasp or release the wire.

The construction of the clamps may be otherwise modified.

In Fig. 8 I have shown the blocks *e e* provided with cam-shaped serrated ends *e' e'* and with pivoted serrated levers *o o*, said serrated ends and levers constituting jaws which automatically grasp the wire inserted between them. Fig. 8 also shows the blocks *e e* as provided with two guide-rods, *c c*, each attached rigidly to one block and adapted to slide in the other, the end pieces, *d d*, being omitted. It is obvious that one guide-rod will suffice in the construction last described as well as that shown in the figures previously described.

Instead of providing two guide-rods, I may employ one, as shown in Fig. 9 and heretofore described, and for some purposes this may prove the preferred construction.

I claim—

1. The combination, with the shaft having the right and left hand screw-threads thereon, means for turning said shaft, and the two blocks mounted on and adapted to be moved by said right and left hand screw-threads, whereby they are adjusted with relation to each other, of band-clamps carried by said blocks, thumb-pieces for engaging or disengaging said clamps with the band, and guide-rods for holding the clamps in alignment with each other, substantially as described.

2. The combination of the blocks *e e*, each having at one end a wire-band-clamping device and at the other end a flat-band-clamping device, a right and left screw engaged, as described, with said blocks, and a guide rod or rods to guide the blocks in the movements imparted to them by the screw-shaft.

3. The wire-clamp composed of a block, *e*, having a socket, and a bolt adapted to work in said socket and having a head or enlargement containing a groove formed to receive a wire band, said head arranged to pass within the socket a distance sufficient to bite and firmly hold the wire at the edge, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 28th day of June, A. D. 1887.

JOHN H. WILLIAMS.

Witnesses:

C. F. BROWN,
ARTHUR W. CROSSLEY.